TINEID MOTHS FROM BRITISH COLUMBIA, WITH DESCRIPTIONS OF NEW SPECIES.

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The present paper is based mainly on a large collection made in British Columbia during 1903 by Dr. Harrison G. Dyar, assisted by Messrs. A. N. Caudell and R. P. Currie. It has been found expedient to include descriptions of such other material as is contained in U. S. National Museum from the Northwest, especially the collections received at various times from Prof. T. Kincaid, Seattle, Washington, and from Prof. A. B. Cordley, Corvallis, Oregon; also a large collection from Washington and Idaho recently received from Mr. C. V. Piper, as well as several smaller contributions from different sources.

In addition to these, I have examined the collections of Mr. J. W. Cockle, Kaslo, British Columbia, and of Prof. O. B. Johnson, Seattle, Washington, with permission to retain new forms, and also a smaller collection from Mr. Theodore Bryant, Wellington, British Columbia.

With the exception of the comparatively few species collected by Lord Walsingham in northern California and Oregon in 1872 and described by him in the Proceedings of the Zoological Society of London in 1880 and 1881, very little is known of the Tineina from that region, and as was to be expected many new forms were found, which I hope may be recognized from the following descriptions.

I regret that other duties prevent me at present from doing full justice to the collections; so that I have been obliged to postpone the study of very many of the more obscure forms contained in Doctor Dyar's material.

Family YPONOMEUTIDÆ.

ALLONONYMA, new name. (ORCHEMIA Fernald.)

As pointed out by Lord Walsingham,[a] the name *Orchemia* Guenée can not be employed for the genus represented by *diana* Hübner and justly separated from *Hemerophila* Hübner (*Simathis* Leach) by

[a] Ent. Mo. Mag., XIV, 1903, p. 258.

Prof. C. H. Fernald.[a] Lord Walsingham did not supply another term for this genus, which is in consequence at present without a name; an applicable name may lie dormant, which eventually can be resurrected, but I fail to find any which can be used in the literature at my command, and the genus may therefore, provisionally at least, be known under the name *Allononyma*.

ALLONONYMA DIANA, var. BETULIPERDA Dyar.

Orchemia diana, var. betuliperda Dyar, Proc. U. S. Nat. Mus., XXV, 1902, p. 403; List N. A. Lepidoptera No. 5537*a*, 1902.

One specimen, bred August 4, from alder, Kaslo, British Columbia, which can not be distinguished from the type series bred from *Betula* by Doctor Dyar in Colorado.

HEMEROPHILA Hübner.

HEMEROPHILA ALPINELLA, new species.

Labial palpi whitish ochreous, tip of both joints darker, brown. Tongue well developed, whitish. Antennæ dark brown with silvery white annulations. Face whitish; head and thorax golden olive brown, dotted with white. Forewings golden or bronzy olive brown, irregularly sprinkled with white scales; at basal third is a transverse band of brown without the white sprinkling and at apical third is another similar brown fascia outwardly angulated in the middle and followed by a nearly pure white narrow edge, which is strongly emphasized at the costal margin as a pure white dash. This white transverse angulated line is faintly continued across the hindwings.

The apical part of the forewings is more strongly bronzy metallic than the rest of the wing, the extreme apex and apical part of the costal edge especially so. Hindwings dark fuscous with strong golden reflexion, especially in the apical part outside the above-mentioned narrow white transverse line. Under side of all wings light golden ochreous with the costal white dash at apical third of the forewings plainly indicated. Legs whitish, sprinkled with golden brown; tip of last tarsal joint on posterior legs black; posterior tibiæ not, as is usual in the family, entirely smooth, but with a few longer stiff hairs on upper side of anterior half. Expanse, 14 mm.

Type.—Cat. No. 7808 U. S. National Museum.

Habitat.—Bear Lake Mountain, British Columbia, July 21 (Caudell and Currie), Kaslo, British Columbia (Cockle).

One of the type specimens of which I made a slide of the wings on the right side exhibits a rather unusual aberration in the venation, the hindwing having 7 veins emitted from the cell; besides the usual 8 veins normally found in the hindwing, there is one developed

[a] Can. Ent., XXXII, 1900, p. 237.

between veins 6 and 7, coming out from the cell close below 7; this vein is in every respect as distinct and perfect, tubular as the other veins. The left wings of the same specimen and those of the other specimens examined have normal venation.

Only once before have I come across a similar irregularity in the venation of micros among the more than two thousand wings of which I have made a denuded slidemount. That is in one of Chambers's own specimens of *Euplocamus fuscofasciella*, in which the left forewing has 13 distinct tubular veins. These two cases must be regarded as monstrosities. The venation in the microlepidoptera is generally remarkably constant within the species with a few striking exceptions as in some species of *Monopis*, which exhibit considerable variation within the species, and sometimes in the same specimen.

Another species unstable in venation is *Semioscopis steinkellneriana* Schiffermüller, which according to Meyrick[a] has veins 2 and 3 in forewing stalked. These veins are sometimes stalked, sometimes connate, and sometimes separate. In one European specimen in the U. S. National Museum they are stalked in the one wing and separate in the other.

HEMEROPHILA KINCAIDIELLA, new species.

Antennæ dark fuscous, without any color annulations. Labial palpi dark shining fuscous; base of terminal joint and inner side of both joints whitish. Head and thorax mouse-gray, face slightly lighter. Fore wings dirty bluish white, with dark bluish brown and black markings and with a metallic violet sheen; base of costa blackish; outside of this basal dark patch is a nearly immaculate white costal space, followed a little before the middle of the wing by a brown costal spot, sometimes dissolved into two or three smaller spots and downwardly continued into a broad, outwardly oblique dark brown transverse streak reaching to the fold. At apical third is a large, dark brown, cloudy costal spot, connected more or less distinctly with the dark transverse streak. Just below the first dark costal spot in the middle of the cell is a small, round, prominent black dot, and below this on the fold is a similar black dot. Another of the same color and form is found at the end of the cell. The apical and dorsal part of the wing is irregularly sprinkled with small brown spots. Hind wings, light fuscous; abdomen, yellowish; legs, silvery white. Expanse, 17–20 mm.

Type.—Cat. No. 7809, U. S. National Museum.

Habitat.—Seattle, Washington, March (Kincaid). I have also seen two specimens from Wellington, British Columbia (Bryant).

[a] Handbook British Lepidoptera, 1895, p. 617.

CHOREUTIS Hübner.

CHOREUTIS INFLATELLA Clemens.

Brenthia inflatella Clemens, Proc. Ent. Soc. Phil., II, 1863, p. 5; Tin. N. Am., 1872, p. 209.—Dyar, List N. A. Lepidoptera, No. 5519, 1902.—Busck, Proc. Wash. Ent. Soc., V, 1903, p. 210.

Choreutis inflatella Dyar, Can. Ent., XXXII, 1900, p. 85.—Fernald, Can. Ent., XXXII, 1900, p. 242.—Kearfott, Journ. N. Y. Ent. Soc., IX, 1902, p. 110.

A large series from Pullman, Washington, May (Piper).

CHOREUTIS ONUSTANA Walker.

Simæthis onustana Walker, Cat. Brit. Mus., XXX, 1864, p. 996.—Dyar, List N. A. Lepidoptera, No. 5521, 1902.

Choreutis ohioensis Zeller, Verh. k. k. zool.-bot. Gesell., Wien, XXV, 1875, p. 320.

Choreutis onustana, Riley, Smith's List Lep. Bor. Am., No. 5636, 1891.—Dyar, Can. Ent., XXXII, 1902, p. 385.—Fernald, Can. Ent., XXXII, 1902, p. 242.—Kearfott, Journ. N. Y. Ent. Soc., IX, 1902, p. 112.

Kaslo, British Columbia, June (Dyar and Cockle); Bear Lake Mountain, British Columbia, July (Caudell and Currie); Collins, Idaho, July (Piper).

CHOREUTIS BALSAMORRHIZELLA, new species.

Antennæ black, with silvery white annulations. Second joint of labial palpi golden brown, with well-developed tuft of brown, black, and white hairs; the end of the joint is white, with a deep black annulation just before the tip; terminal joint white, sprinkled with brown and black scales. Face and head covered with blackish scales, the tips of which are golden brown. Thorax golden brown, the patagia with a bluish metallic longitudinal streak. Base of fore wing golden brown, with a costal and a central longitudinal streak, metallic blue. Outside of this basal patch, which extends farther out along the costa than on the dorsal edge, the wing is thickly covered with cream-colored scales, which form a broad oblique whitish fascia; on the middle of the outer irregular edge of this fascia is a small, dark-edged spot of bright metallic scales. The middle portion of the wing is golden greenish, sprinkled with whitish and golden scales, and the end of the wing is again heavily overlaid with cream-colored scales. At the end of the cell is a large, black edged metallic spot, followed by a short transverse oblique orange streak, which again is followed by black and metallic scales. At apical third is an oblique unmottled cream-colored costal streak, preceded by a few metallic scales, and a few such scales are also found on the tip of the wing just before apex. Cilia dark brown.

Hind wings dark gray, the underside with three irregular transverse white bands, of which the outer is shown through on the upper surface of the wing.

Abdomen dark fuscous, each joint tipped with white scales. Legs greenish fuscous, annulated with white. Expanse, 17–18 mm.

Food plant.—*Balsamorrhiza sagittata.*

Habitat.—Pullman, Washington, June.

Type.—Cat. No. 7810, U. S. National Museum.

Described from a large series bred in June by Mr. C. V. Piper.

The species is very close to *Choreutis silphiella* Grote, and may ultimately prove to be merely a variety of that species. In view of the different food plants and locality and of the slight but apparently constant differences in ornamentation, I believe it safer to separate it from that species. In this connection I may offer a dissenting opinion from the recently adopted view that *Chalcela gemmalis* Hulst[a] is a synonym of *Choreutis silphiella* Grote.[b] The descriptions certainly do not read alike, and while they ultimately may be found to apply to varieties of the same species, the assertion of Mr. W. D. Kearfott,[c] who admits that he knows the species merely from description, that the two are "manifestly" synonyms, is not in agreement with the opinion of the two recognized authorities, who had the specimens before them and both declared the Sierra Nevada form an allied but distinct species. Until more ample proof is forthcoming it is safer to admit that we do not know. *Choreutis balsamorrhizella* may be the same as the Sierra Nevada species, though Hulst's description does not agree fully with the specimens before me. More authentic material from the different localities, together with a careful examination of the types, is necessary to settle the matter.

CHOREUTIS PIPERELLA, new species.

Antennæ black with silvery white annulations. Labial palpi ochreous speckled with black and white; tuft black and white; terminal joint, whitish sprinkled with darker scales. Face and head golden orange, speckled with black and white. Thorax and basal fourth of forewings light golden orange; a longitudinal streak on the patagia and a subcostal and a central longitudinal on the base of the wing bluish metallic.

The ground color of the rest of the wing is golden green, heavily overlaid with cream-colored scales. There are three conspicuous velvety black spots with metallic bronzy center, one large one at the end of the cell, a smaller one before it in the cell and one at tornus. Above these spots are several scattered golden metallic scales. Cilia brown.

Hind wings dark fuscous with a single white dash and a whitish submarginal line around the wing. Underside with irregular white

[a] Trans. Am. Ent. Soc., XIII, 1886, p. 148.

[b] Papilio, I, 1881, p. 40.

[c] Journ. N. Y. Ent. Soc., X, 1902, p. 115.

blotches and bands. Underside of body silvery white; upper side of abdomen brown. Legs fuscous with silvery white annulations. Expanse 12–13 mm.

Habitat.—Pullman, Washington, June (Piper).

Type.—Cat. No. 7811, U. S. National Museum.

I take pleasure in naming this beautiful species in honor of the collector. It is nearest to *Choreutis silphiella*, but smaller and easily distinguished by the different wing ornamentation.

CHOREUTIS LEUCOBASIS Fernald.

Choreutis leucobasis Fernald, Can. Ent., XXXII, 1900 p. 242.—Kearfott, Journ. N. Y. Ent. Soc., IX, 1902, p. 124.—Dyar, List N. A. Lep., No. 5529, 1902.

Bred from *Anaphalis margaritacea* by Doctor Dyar, Kaslo, British Columbia (July); also a specimen from Wellington, British Columbia (Bryant).

GLYPHIPTERYX Hübner.

GLYPHIPTERYX IMPIGRITELLA Clemens.

Glyphipteryx impigritella Clemens, Proc. Ent. Soc. Phila., II, 1862, p. 9; Tin. N. Am., 1872, p. 214.—Dyar, Can. Ent., XXXII, 1900, p. 84.—Fernald, Can. Ent., XXXII, 1900, p. 242.—Dyar, List N. A. Lep., No. 5513, 1902.—Busck, Proc. Wash. Ent. Soc., V, 1903, p. 211.

One specimen from Kaslo, British Columbia, May (Cockle).

EUCALANTICA, new genus.

Antennæ $\frac{3}{5}$ of forewing, thick, simple. Second joint of labial palpi long, porrected, somewhat thickened above toward apex, with rough scales; terminal joint shorter, deflexed, blunt. Maxilary palpi well developed, folded. Face smooth, head rough. Forewing broad, widening toward tornus, pointed; termen oblique; 12 veins; 7 to termen; 9 and 10 stalked; 1*b* with subobsolete fork at base. Hind wings as broad as forewings, ovate, costa straight; 8 veins, all separate; vein 2 from before middle of cell; 3 from much before end of cell; 4, 5, 6, and 7 equidistant, nearly parallel; posterior tibia smooth.

Type.—*Calantica polita* Walsingham.

While the type of this genus has a certain superficial resemblance to the true genus *Calantica* Zeller, it is in reality not very close to this genus, as supposed by Lord Walsingham,[a] differing both in the oral characters and in the very distinct venation.

EUCALANTICA POLITA Walsingham.

Calantica polita Walsingham, Proc. Zool. Soc. Lond., 1881, p. 302.—Dyar, Can. Ent., XXXII, 1900, p. 38; List N. A. Lep., No. 5493, 1902.

Several specimens from Seattle, Washington, May (Kincaid). Authentic specimens, determined by Lord Walsingham are in the U. S. National Museum.

[a] Proc. Zool. Soc., London, 1881, p. 302.

EUCERATIA Walsingham.

EUCERATIA CASTELLA Walsingham.

Euceratia castella WALSINGHAM, Proc. Zool. Soc. Lond., 1881, p. 311.—DYAR, Can. Ent., XXXII, 1900, p. 37; List N. A. Lep., No. 5485, 1902.

Several specimens from Pullman, Washington, and from Moscow Mountains, Idaho, July (Piper).

CEROSTOMA Latreille.

CEROSTOMA RADIATELLA Donovan.

Phalæna radiatella DONOVAN, Nat. Hist. Brit. Ins., III, 1794, p. 14.
Cerostoma radiatella WALSINGHAM, Proc. Zool. Soc., Lond., 1881, p. 303; Insect Life, I, 1889, p. 287.—DYAR, List N. A. Lep., No. 5500, 1902.—BUSCK, Journ. N. Y. Ent. Soc., XI, 1903, p. 50.
Plateloptera ochrella CHAMBERS, Journ. Cin. Soc. Nat. Hist., II, 1880, p. 181.

Two specimens from Kaslo, British Columbia (Cockle). Doctor Dyar says that there are no oaks in that locality. As oak is the food plant of *radiatella* this would suggest a misidentification, but I am not able to find any differences from certain varieties of the European species. The explanation of the matter probably is that the specimens were not taken in the immediate vicinity of Kaslo. They bear no exact locality label.

TRACHOMA Wallengren.

TRACHOMA FALCIFERELLA Walsingham.

Cerostoma falciferella WALSINGHAM, Proc. Zool. Soc. Lond., 1881, p. 307.
Trachoma falciferella RILEY, Smith, List Lep. Bor. Am., No. 5201, 1891.—DYAR, List N. A. Lep., No. 5491, 1902.—BUSCK, Journ. N. Y. Ent. Soc., XI, 1903, p. 57.

Specimens from Pullman, Washington (Piper), and from Kaslo, British Columbia (Dyar and Cockle).

HARPIPTERYX Hübner.

HARPYPTERYX DENTIFERELLA Walsingham.

Cerostoma dentiferella WALSINGHAM, Proc. Zool. Soc. Lond., 1881, p. 308.
Periclymenobius dentiferella RILEY, Smith, List Lep. Bor. Am., No. 5205, 1891.—DYAR, List N. A. Lep., No. 5489, 1902.
Harpypteryx dentiferella BUSCK, Journ. N. Y. Ent. Soc., XI, 1903, p. 56.

Kaslo, British Columbia, August (Dyar), and Collins, Idaho, July (Piper). These specimens are intermediate between the three forms named by Lord Walsingham *dentiferella*, *canariella*, and *frustrella*, and they exhibit considerable variation. From the material which I have examined it is my opinion that the three names represent merely extreme varieties of the same species. Until the species is bred, and this opinion is confirmed, it will, however, be proper to retain all three names.

PLUTELLA Schrank.

PLUTELLA MACULIPENNIS Curtis.

Cerostoma malculipennis Curtis, Brit. Ent., 1832, pl. ccccxx (expl. p. 2).
Plutella maculipennis Walsingham, Ent. Mo. Mag., XXXIII, 1897, p. 173.—Dyar, List N. A. Lep., No. 5503, 1903.—Busck, Proc. Wash. Ent. Soc., V, 1903, p. 194.
Plutella cruciferarum Zeller, Stett. Ent. Ztg., IV, 1843, p. 281.—Chambers, Bull. U. S. Geol. Surv., IV, 1878, p. 161.—Riley, Smith List Lep. Bor. Am., No. 5187, 1891.
Cerostoma brassicella Fitch, Rep. Nox. Ins. N. Y., I, 1856, p. 170.
Plutella limbipennella Clemens, Proc. Ac. Nat. Sc. Phila., XII, 1860, p. 6.
Plutella mollipedella Clemens, Proc. Ac. Nat. Sc. Phila., XII, 1860, p. 6.
Plutella xylostella Packard, Rep. Inj. Ins. Mass., II, 1872, p. 11.
Cerostoma dubiosella Beutenmüller, Can. Ent., XXI, 1889, p. 27.

Many specimens from Kaslo, British Columbia (Dyar and Cockle), and from Pullman, Washington (Piper).

PLUTELLA PORRECTELLA Linnæus.

Tinea porrectella Linnæus, Syst. Nat., 1758, p. 540.
Plutella vigilaciella Clemens, Proc. Ac. Nat. Sc. Phila., 1860, p. 5; Tin. N. Am., 1872, p. 90.
Plutella porrectella Chambers, Bull. U. S. Geol. Surv., IV, 1878, p. 161.—Walsingham, Proc. Zool. Soc. Lond., 1881, p. 305.—Riley, Smith List Lep. Bor. Am., No. 5188, 1891.—Dyar, List N. A. Lep., 1903, No. 5504.—Busck, Proc. Wash. Ent. Soc., V, 1903, p. 194.

Received from Wellington, British Columbia (Bryant).

PLUTELLA INTERRUPTA Walsingham.

Plutella interrupta Walsingham, Proc. Zool. Soc. Lond., 1881, p. 304.—Dyar, List N. A. Lep. No. 5508, 1902.

Kaslo, British Columbia, June (Cockle). Wellington, British Columbia (Bryant).

PLUTELLA NOTABILIS, new species.

Antennæ black with silvery white annulations. Tuft on second joint of labial palpi black on the outer side, whitish in front; terminal joint white with black tip. Face white; head golden straw colored; thorax white with central black line and black patagia. Fore wings white, strikingly marked with black, as follows: On the fold from base to basal third of the wing is a heavy black streak; another longitudinal black streak in the middle of the cell is attenuated toward base and bends at the end of the cell downward in a sharp angle, reaching the dorsal edge. Following this streak is a nearly circular black spot, and around the apical edge is a series of marginal black spots, four on the costal and seven or eight on the dorsal edge. Cilia white with a

basal black line. Hind wings light fuscous. Venation typical. Abdomen light fuscous. Legs white sprinkled with fuscous. Expanse, 19 mm.

Habitat.—Mount Rainier, Washington, 10,000 feet alt., August (Piper).

Type.—Cat. No. 7812, U. S. National Museum.

A very striking species, unlike any described American *Plutella*.

PLUTELLA POULELLA, new species.

Antennæ light fuscous. Labial palpi dark brown exteriorly, ochreous white on the inner side; tuft not large. Face whitish in the middle, brown along the sides. Top of head with loose, erect scales, whitish. Thorax and forewings light ochreous fuscous; costal edge and apical part with strong, golden reflexions; below the fold the wing is whitish fuscous, lighter than above. Along the fold from the base of the wing is a dark brown, irregular streak with two short, pointed projections into the light colored field below. The entire wing is sparsely sprinkled with dark fuscous scales which form small and ill-defined dark spots on the outer costal edge and at apex. Hindwings whitish fuscous, nearly transparent and with a bluish tinge. Abdomen ochreous fuscous. Genitalia light ochreous. Legs ochreous, mottled with brown on the outer surfaces. Venation typical. Alar expanse, 24 mm.

Habitat.—Kaslo, British Columbia (Cockle).

Type.—Cat. No. 7883, U. S. National Museum.

Very similar in ornamentation to *P. maculipennis* Curtis, but nearly twice as large.

ZELLERIA Stainton.

ZELLERIA GRACILARIELLA, new species.

Both joints of labial palpi whitish, strongly mottled with black on the outer side. Antennæ light gray with narrow black annulations. Face reddish brown; tuft on head dirty yellow. Thorax and forewings brown, with strong violet reflexions; the fold more ochreous. Sparsely and irregularly scattered over the wing are dark metallic blue scales, which congregate to form a faint and much interrupted longitudinal streak under and parallel with the fold. Cilia bluish cinerous. Hind wings dark, shining bluish fuscous. Cilia strongly bluish. Abdomen above and the inner side of the legs silvery fuscous; underside of abdomen and the exposed parts of the legs reddish. Expanse, 18 mm.

Habitat.—Kaslo, British Columbia.

Foodplant: *Ribes lacustre* (Dyar).

Type.—Cat. No. 7813, U. S. National Museum.

The coloration of this species is strikingly similar to that of *Gracilaria elongella* Linnæus, var. *alnicolella* Chambers.[a] The fore wings of this and the following species have veins 6 and 7 stalked, one branch going to each side of apex; in those European species of *Zelleria*, which I have been able to examine, these two veins are separate though approximate at base; such is also the case with an American species[b] on *Celastrus*, which I have determined for Mr. William Kearfott; but as all the other characters are typical I do not think this difference of generic value. Meyrick places this genus and *Argyresthia* in the Tineidæ, but in spite of the tufted head they seem to me more nearly related to the *Yponomeutidæ*, as placed by Staudinger and Rebel.[c] The old family, *Argyresthiidæ*, should probably be adopted.

ZELLERIA RIBESELLA, new species.

Labial palpi yellow, strongly mottled with black especially on the outer and under surface. Antennæ blackish. Face whitish. Tuft on head light greenish yellow. Thorax and fore wings light greenish yellow with sparse black scales irregularly scattered over the wing and congregating more densely into a longitudinal interrupted streak, under and parallel with the fold and into another longitudinal streak before apex; basal half of costal edge is also black. The black is really the ground color of the wing, but it is so closely overlaid with the light scales as to make the wing decidedly light colored. Cilia dark fuscous. Hind wings dark fuscous. Abdomen blackish, sprinkled on the underside with yellow. Legs dark fuscous, sprinkled on the outer surfaces with yellow.

Alar expanse: 19 mm.

Habitat.—Kaslo, British Columbia.

Foodplant: *Ribes lacustre.*

Type.—Cat. No. 7814, U. S. National Museum.

Bred by Doctor Dyar at the same time and from the same foodplant as the foregoing species without differences in larvæ being noted. This would suggest that this species might be only a variety of the foregoing and such may ultimately be proven, but in the absence of actual observation, the very different coloration does not permit such assumption.

This species has a noteworthy superficial resemblance to *Gracilaria elongella* Linnæus, var. *shastaella* Beutenmüller.[d]

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[a] See p. 770.

[b] Since described as *Zelleria celastrusella* Kearfott. (Journ. N. Y. Ent. Soc., XI, 1903, p. 150.)

[c] Cat. Lep. Eur., II, 1901, p. 134.

[d] See p. 771.

ARGYRESTHIA Hübner.

ARGYRESTHIA GŒDARTELLA Linnæus.

Large series from Wellington, British Columbia, September (Dyar), and from Cornwall, Idaho, August (Piper).

ARGYRESTHIA PYGMÆELLA Hübner.

Many specimens from Kaslo, August (Dyar and Cockle), and from Bear Lake Mountain, British Columbia, July (Caudell and Currie); also specimens from Seattle, Washington, bred by Professor Kincaid from willow. This is the first record of the breeding of the species in this country, and it verifies the determination of this European species, the food plant of which has long been known in Europe.

Family GELECHIIDÆ.

ARISTOTELIA Hübner.

ARISTOTELIA ROSEOSUFFUSELLA Clemens.

Gelechia roseosuffusella Clemens, Proc. Acad. Nat. Sci. Phila., XII, 1860, pp. 162, 434; Proc. Ent. Soc. Phila., II, 1863, p. 121; III, 1864, p. 508; Tin. N. Am., 1872, pp. 40, 113, 225, 262.—Chambers, Can. Ent., IV, 1872, pp. 69, 148, 169, 193; Bull. U. S. Geol. Surv., III, 1877, pp. 125, 141; Can. Ent., IX, 1877, p. 14; Bull. U. S. Geol. Surv., IV, 1878, pp. 110, 146; Journ. Cinn. Soc. Nat. Hist., II, 1880, p. 183.—Murtfeldt, Can. Ent., VI, 1874, p. 222; Bull. U. S. Dept. Agr., Div. Ent., 1891, pp. 23, 53.—Riley, Smith's List Lep. Bor. Am., No. 5470, 1891.

Gelechia rosasuffusella Chambers, Cinn. Quart. Jour. Sci., II, 1875, p. 290.

Gelechia (*Ergatis*) *roseosuffusella* Zeller, Verh. k. k. zool.-bot. Gesell. Wien, XXIII, 1872, p. 272.—Walsingham, Trans. Am. Ent. Soc., X, 1882, p. 180.

Gelechia bellela Walker, Cat. Lep. Ins. Brit. Mus., XXIX, 1864, p. 595.

Aristotelia roseosuffusella Walsingham, Proc. Zool. Soc. Lond., 1897, p. 66.—Dietz, Smith's List N. Jers. Ins., 1900, p. 470.—Busck, Proc. U. S. Nat. Mus., XXIII, 1900, p. 226; Dyar's List N. A. Lep., No. 5575, 1902; Proc. U. S. Nat. Mus., XXV, 1903, p. 796; Proc. Wash. Ent. Soc., V, 1903, p. 199.

Several specimens from Kaslo, British Columbia, July (Dyar).

ARISTOTELIA FUNGIVORELLA Clemens.

Gelechia fungivorella Clemens, Proc. Ent. Soc. Phila., III, 1864, p. 507; N. Am. Tin., 1872, p. 261.—Walsh, Proc. Ent. Soc. Phila., VI, 1866, p. 273.—Packard, Guide, 1870, p. 350.—Chambers, Bull. U. S. Geol. Surv., IV, 1878, pp. 112, 143.—Riley, Smith's List Lep. Bor. Am., 1891, No. 5367.

Aristotelia fungivorella Busck, Dyar's List N. A. Lep., No. 5579, 1903; Proc. U. S. Nat. Mus., XXV, 1903, pp. 798, 933; Proc. Wash. Ent. Soc., V, 1903, p. 219.

Several specimens from Kaslo, British Columbia, August (Dyar and Cockle), and from Pullman, Washington, August (Piper).

ARISTOTELIA RUBIDELLA Clemens.

Gelechia rubidella Clemens, Proc. Acad. Nat. Sci. Phila., XII, 1860, pp. 163, 434; Proc. Ent. Soc. Phila., II, 1863, p. 121; Tin. N. Am., 1872, pp. 40, 115, 225.—Chambers, Bull. U. S. Geol. Surv., IV, 1878, p. 147.—Riley, Smith's List Lep. Bor. Am., No. 5471, 1891.

Gelechia rubensella Chambers, Can. Ent., IV, 1872, p. 193; Bull. U. S. Geol. Surv., IV, 1878, pp. 89, 147.—Murtfeldt, Can. Ent., VI, 1874, p. 222; Bull. U. S. Dept. Agr., Div. Ent., No. 23, 1891, p. 54.

Gelechia pudibundella Chambers, Can. Ent., IX, 1877, p. 23.

Gelechia (*Ergatis*) *rubidella* Walsingham, Trans. Am. Ent. Soc., X, 1882, p. 180.

Eucatoptus rubidella Walsingham, Proc. Zool. Soc. Lond., 1897, p. 70.

Aristotelia rubidella Dietz, Smith's List N. Jers., 1900, p. 475.—Busck, Dyar's List N. A. Lep., No. 5578, 1903; Proc. U. S. Nat. Mus., XXV, 1903, p. 798; Proc. Wash. Ent. Soc., V, 1903, p. 199.

Many specimens from Kaslo, British Columbia, July (Dyar and Cockle).

ARISTOTELIA NATALELLA, new species.

Antennæ light ocherous, with dark brown annulations. Labial palpi light yellow; terminal joint not more than half as long as the second joint, pointed. Face, head, and thorax light yellow; patagia darker. Fore wings rich saffron yellow, lightest at base, gradually deeper saffron toward apex. At apical third is a hardly perceptible light ocherous costal streak, and similar light, inconspicuous dashes are found along the costal and dorsal edge on the apical third of the wing. Around the extreme apical edge is a prominent narrow black line before the cilia. Cilia yellowish. Hind wings dark fuscous. Legs yellow; tarsi slightly shaded with fuscous. Venation typical. Expanse, 15–16 mm.

Habitat.—Kaslo, British Columbia, July (Dyar and Cockle); Seattle, Washington, July (Kincaid).

Type.—Cat. No. 7854, U. S. National Museum.

Described from a large series; quite close to the following species and to *Aristotelia gilvolineella* Clemens, but the color is much deeper than in any of these species, and *A. natalella* is at once distinguished from both these species by the total absence of dark discal spots.

ARISTOTELIA HARRISONELLA, new species.

Antennæ yellowish fuscous, with indistinct darker annulations. Second joint of labial palpi ocherous, mottled with black; terminal joint very light yellow, nearly white, with the extreme tip dark. Face whitish. Head and thorax light yellowish. Fore wings dirty whitish, overlaid with light ocherous. On the middle of the fold is a prominent short black streak, and at the end of the cell is a deep black round spot. Around the apical edge is a not very conspicuous dark line

before the cilia. Abdomen and legs ocherous; anterior legs shaded with black. Hind wings light yellowish fuscous. Venation typical. Expanse, 16 mm.

Habitat.—Kaslo, British Columbia, July (Dyar and Cockle); Seattle, Washington (Kincaid).

Type.—Cat. No. 7855, U. S. National Museum.

Described from a large series; intermediate between the foregoing species and *Aristotelia disconotella* Chambers, but with more slender and more pointed fore wings than either. Easily distinguished from the foregoing species by the dark spots, and from *A. disconotella* by its much lighter color.

GNORIMOSCHEMA Busck.

GNORIMOSCHEMA GALLÆSOLIDAGINIS Riley.

Gelechia gallæsolidaginis Riley, Mo. Rep. Nox. Ins., I, 1869, p. 173; II, 1870, pp. 20, 132, 134; Smith's List Lep. Bor. Am., No. 5377, 1891.—Chambers, Can. Ent., VIII, 1876, p. 19; IX, 1877, p. 14; Cinn. Quart. Journ. Sci., II, 1875, p. 289; Bull. U. S. Geol. Surv., III, 1877, pp. 128, 141; IV, 1878, pp. 115, 143.—Kellicot, Can. Ent., X, 1878, p. 201.—Dietz, Smith's List Ins. N. Jers., 1900, p. 474.

Gnorimoschema gallæsolidaginis Busck, Proc. U. S. Nat. Mus., XXIII, 1900, p. 227; Dyar's List N. A. Lep. No. 5620, 1902; Proc. U. S. Nat. Mus., XXV, 1903, p. 824.

A bred series from Pullman, Washington, August (Piper).

GNORIMOSCHEMA WASHINGTONIELLA, new species.

Antennæ white, with brown annulations. Labial palpi white, terminal joint mottled with light brown. Face white. Head and thorax light ocherous; thorax with a central white patch. Fore wings ocherous white, finely mottled with black, each scale being slightly tipped with black; at base is an unmottled fawn-colored spot, followed by a nearly pure white narrow oblique line, which is again followed by an obliquely placed large unmottled fawn-colored spot in the middle of the wing, which nearly reaches the costal edge at basal third, and which gradually shades into the ground color toward the costal edge farther out; at apical third is a large triangular ill-defined fawn-colored costal spot, and the tip of the wing is freely suffused with the same color. Cilia white, strongly daubed with black scales. Hind wings light fuscous. Legs whitish, barred on the outside with black; tarsi yellowish. Oral parts and venation typical. Expanse, 19 mm.

Habitat.—Pullman, Washington, August (Piper).

Type.—Cat. No. 7856, U. S. National Museum.

Of the same general pattern as *Gnorimoschema gallæasteriella* Kellicott, but much smaller and more slender; easily recognized by its very light coloration.

GNORIMOSCHEMA RADIATELLA, new species.

Antennæ curiously marked; uniformly dark shining fuscous above, reddish white and black checkered below. Second joint of labial palpi reddish white, strongly barred with black on the outside; terminal joint with base and an annulus around the middle black. Face irridescent, reddish white; top of head flecked with reddish fuscous. Thorax reddish fuscous. Fore wings with a nearly continuous, narrow black longitudinal central line from base to apex; costal part of the wing above this line light whitish red, shaded with fuscous; dorsal part below the central black line darker than costal half, reddish, more profusely overlaid with dark fuscous and black scales. At base is an ill-defined, small, unmottled brick-red patch. Cilia and hind-wings light fuscous; abdomen, dark fuscous above, under side ocherons. Legs blackish, mottled with light red and white scales; tarsi black with tip of each joint reddish white. Expanse, 16 mm.

Habitat.—Pullman, Washington, August (Piper).

Type.—Cat. No. 7857, U. S. National Museum.

Nearest in pattern and general appearance to *Gnorimoschema pedmontiella* Chambers, but not really like any described species of that genus. It reminds in coloration of certain varieties of *Cerostoma radiatella* Donovan.

GNORIMOSCHEMA SPLENDORIFERELLA, new species.

Antennæ dark fuscous, faintly annulated with white. Labial palpi light yellow; second joint slightly mottled with red on the outside; terminal joint with a blackish annulation at base and another before the tip. Face light yellow; head darker reddish yellow. Thorax deep bluish black. Forewings shining, intense purplish red; a narrow costal margin and the apical part of the wing mottled with white and bluish black scales; a basal subcostal longitudinal streak, and an ill-defined dorsal and a costal spot at the beginning of the cilia yellow. Cilia white, dotted with black. Abdomen dark fuscous with the ends of the joints silvery white. Legs dark fuscous, barred with white. Expanse, 16 mm.

Habitat.—Pullman, Washington, July (Piper).

Type.—Cat. No. 7858, U. S. National Museum.

This beautiful species can only be compared with the quite closely allied *Gnorimoschema saphirinella* Chambers, which has the same intense red color. The present species, however, is larger, and lacks the black longitudinal streaks found in *saphirinella;* the dark thorax and the lack of brown spots on and near the fold also separate it from this species.

GELECHIA Hübner.

GELECHIA MANDELLA, new species.

Antennæ purplish black checkered with roseate white. Second joint of labial palpi dark purplish brown on the exterior side, whitish on the interior side; brush well developed; terminal joint purplish black. Face white. Head and thorax dark purplish brown. Fore wings dark purplish fuscous sprinkled with black and white scales. There are two indistinct black discal spots, one shortly before and the other at the end of the cell. A very faint, thin, outwardly sharply angulated white fascia crosses the wing at apical third, and there are a few white scales before the apex. In some specimens the fascia is hardly perceptible. The entire edge of the wing, but more especially the apical part, is suffused with light rose-colored scales. Cilia roseate fuscous. Hind wings broader than the fore wings, dark fuscous. Abdomen dark fuscous above; roseate silvery on the under side. Legs dark fuscous, sprinkled with roseate and silvery scales except on the tarsi which are dark. Expanse, 17–18 mm.

Habitat.—Kaslo, British Columbia, August (Dyar).

Type.—Cat. No. 7859, U. S. National Museum.

Nearest to *Gelechia ribesella* Chambers, and much like this species in size, form, and general coloration, with the same roseate tinge on the fore wings, but without the striking white markings of that species.

GELECHIA MEDIOFUSCELLA Clemens.

Gelechia mediofuscella Clemens, Proc. Ent. Soc. Phil., II, 1863, pp. 11, 121; Tin. N. Am., 1872, pp. 218, 224.—Chambers, Bull. U. S. Geol. Surv., IV, 1878, p. 144.—Busck, Dyar's List N. A. Lep., No. 5764, 1902; Proc. U. S. Nat. Mus., XXV, 1903, p. 885.

Gelechia ragella Walker, Cat. Lep. Het. Brit. Mus., XXIX, 1864, p. 596.—Walsingham, Trans. Am. Ent. Soc. Phila., X, 1882, p. 178.—Riley, Smith's List. Lep. Bor. Am., No. 5506, 1891.

Depressaria fuscoochrella Chambers, Can. Ent., IV, 1872, pp. 106, 129, 147, 148.

Gelechia fuscoochrella Chambers, Bull. U. S. Geol. Surv., IV, 1878, p. 143.

Gelechia [*Lita*] *liturosella* Zeller, Verh. k. k. zool.-bot. Gesell. Wien, XXIII, 1873, p. 265.—Chambers, Bull. U. S. Geol. Surv., IV, 1878, p. 144.

Specimens from Seattle, Washington (Kincaid).

GELECHIA MONELLA, new species.

Antennæ dark fuscous checkered with white. Tuft on second joint of labial palpi large, projecting, approaching the genus *Ypsolophus* in form; basal half deep black, outer half white; terminal joint blackish. Face and head whitish, mottled with fuscous. Thorax and fore wings light fuscous irregularly mottled with black, white, and gray scales; costal edge somewhat lighter than the rest of the wing. In the center of the wing is a row of three more or less pronounced longitudinal

blackish streaks, one beginning at the base of the wing, the next on the outer part of the cell, and the third at the end of and outside the cell. These dark streaks are, however, not very constant, and in some specimens only the middle one is at all prominent. Around the apical edge is a row of ill-defined dark spots, with the intervals bluish white, and the entire insect has a faint violet or roseate tinge. Fore wings narrow elongate, pointed, termen very oblique. Hind wings somewhat broader than the fore wings, light fuscous. Venation typical. Legs and underside of the body bluish white, strongly overlaid with dark fuscous. Expanse, 18 mm.

Habitat.—Kaslo, British Columbia, August (Dyar).

Type.—Cat. No. 7860, U. S. National Museum.

This species resembles in a general way, and especially in the form of the palpi, *Gelechia anarsiella* Chambers, but the coloration of the palpi and the more varied wing pattern separates it easily from that species; in coloration it comes near *Gelechia dyariella* Busck.

GELECHIA CEANOTHIELLA, new species.

Antennæ dark fuscous. Labial palpi dark blackish brown, the terminal joint and the interior side of the second joint sparsely mottled with yellowish white; underside of brush yellowish. Face yellowish. Head, thorax, and anterior wings dark purplish brown; on the middle of the fold is a small yellow streak, followed by blackish scales; obliquely above this in the cell is a blackish dot partly surrounded by yellow scales and at the end of the cell is another similar spot. At apical third is a small yellow costal streak and around apical edge is a more or less complete series of small yellow dots. Cilia dark fuscous. Hind wings dark fuscous. Abdomen yellowish fuscous above, especially on basal joints; dark fuscous below, on the underside. Legs yellowish, shaded with fuscous. Alar expanse, 19 mm. Foodplant, *Ceanothus.*

Habitat.—Kaslo, British Columbia (Dyar).

Type.—Cat. No. 7873, U. S. National Museum.

Very close to *Gelechia trialbamaculella* Chambers, with the same ground color and wing pattern; the dark labial palpi, however, are an easy mark of distinction.

ANACAMPSIS Curtis.

ANACAMPSIS FRAGARIELLA, new species.

Antennæ light brown, barred with black. Basal part of second joint of labial palpi light brown; apical part whitish; terminal joint much longer than second joint, whitish, with a narrow brown longitudinal line in front from base to tip. Face fawn colored; head and thorax brown. Fore wings light whitish brown, the color somewhat deeper toward the tip than at the base; at apical third is a broad, ill-defined,

darker, mahogany-brown fascia. Cilia brown, hind wings and cilia dark fuscous. Body and legs brown. Generic characters typical. Expanse, 16 mm.

Food plant: Strawberry (*Fragaria*).

Habitat.—Pullman, Washington, July (Piper).

Type.—Cat. No. 7861, U. S. National Museum.

The coloration does not admit the confounding of this species with any described American species; in this it is very close (though lighter brown) to the European species *Anacampsis subsequella* Hübner, the larva of which, however, feeds on *Prunus spinosus* [Heinemann], and from which it is at once distinguished by the total absence of white at the apical third of the fore wing.

ANACAMPSIS NIVEOPULVELLA Chambers.

Gelechia niveopulvella Chambers, Can. Ent., VII, 1875, p. 210; Bull. U. S. Geol. Surv., IV, 1878, p. 145.

Anacampsis niveopulvella Busck, Dyar's List. N. A. Lep., No. 5704, 1902; Proc. U. S. Nat. Mus., XXV, 1903, p. 847.

Three specimens, bred by Doctor Dyar, at Kaslo, British Columbia, from *willow*. Food plant not hitherto known. In my Revision of American Gelechiidæ,[a] I suggested that this species might prove an extreme variety of *Anacampsis innocuella* Zeller, corresponding to similar variations of the European *Anacampsis populella* Clerck. Since then I have seen several additional specimens, all from the Northwest, and the constancy of the marking, together with the knowledge of the different food plants, has convinced me that the species is certainly distinct.

TRICHOTAPHE Clemens.

TRICHOTAPHE SIMPLICIELLA, new species.

Antennæ dark fuscous. Labial palpi light ocherous. Face light ocherous. Head and thorax fuscous; patagia light ocherous. Fore wings divided in two nearly equal longitudinal parts, the costal part light ocherous and the dorsal somewhat larger part, dark fuscous; the dividing line is sharp and nearly straight from base of wing to apex, but the fuscous part is slightly overlaid with ocherous in the apical third, except along termen, where the dark color is rather emphasized before the cilia. At the end of the cell is a very light ocherous round dot. Cilia whitish fuscous. Hind wings light fuscous. Abdomen dark fuscous. Legs yellow, tarsi suffused with black except at the tips of the joints. Oral parts and venation typical of the genus. Expanse, 18 mm.

Habitat.—Pullman, Washington, August (Piper).

Type.—Cat. No. 7863, U. S. National Museum.

[a] Proc. U. S. Nat. Mus., XXV, 1903, p. 847.

Nearest *Trichotaphe serrativitella* Zeller, but larger and not nearly so dark in the dorsal part of the wing; at once distinguished from that species by the light discal spot at the end of the cell, and by the straight—not serrate—dividing line between the dorsal and the costal part.

TRICHOTAPHE LEUCONOTELLA, new species.

Antennæ dark fuscous. Labial palpi lacking in the type before me, but will undoubtedly be found to be ocherous, as in the allied species. Face whitish. Head and thorax dark purplish brown. Fore wings dark purplish brown, nearly black, shining. At the end of the cell is a conspicuous canary yellow, somewhat elongated, spot, and at apical third is a hardly appreciable triangular light-brown costal spot. Cilia dark fuscous. Hind-wings dark fuscous. Venation typical. Expanse, 17 mm.

Habitat.—Pullman, Washington (Piper).

Type.—Cat. No. 7864, U. S. National Museum.

Very close to *Trichotaphe juncidella* Clemens, but hardly as dark, and with the second discal spot pronounced, pure yellow, not ocellate and obscure as in *juncidella*.

I have in former years determined this species for several correspondents as "near or equal" *T. juncidella* Clemens, but have no doubt now that it is a distinct species.

TRICHOTAPHE TRIMACULELLA Chambers.

Gelechia trimaculella Chambers, Can. Ent., III, 1874, p. 238; Bull. U. S. Geol. Surv., IV, 1878, p. 147.

Trichotaphe trimaculella Busck, Dyar's List N. A. Lep., No. 5669, 1902; Proc. U. S. Nat. Mus., XXV, 1903, p. 914.

Specimens from Kaslo, British Columbia (Dyar), and from Pullman, Washington, August (Piper).

GLYPHIDOCERA Walsingham.

GLYPHIDOCERA SEPTENTRIONELLA, new species.

Antennæ yellowish fuscous; in the male not quite as specialized as in the other described species of this genus, the notch being simple, not roundly excavated. Labial palpi normal for the genus, long, recurved, compressed, sharp edged; terminal joint pointed; yellowish fuscous, sparsely sprinkled with black scales. Face and head yellowish. Thorax and fore wings yellowish fuscous, evenly sprinkled with black scales. A very faint blackish round spot on the basal part of the cell; a similar one somewhat more pronounced on the middle of the cell, and a double one at the end of the cell. In flown specimens all of these spots are difficult to detect. Cilia yellowish. Hind wings yellowish fuscous. Venation typical. Abdomen yellowish

fuscous; anal appendages yellow. Male genitalia large, but not so specialized as in *Glyphidocera æquepulvella*, Chambers. Legs yellowish, sprinkled with fuscous. Expanse, 18–19 mm.

Habitat.—Kaslo, British Columbia, July (Dyar).

Type.—Cat. No. 7865, U. S. National Museum.

Very close to *Glyphidocera æquepulvella* Chambers, but fore wings are more slender and more mottled with black. The less specialized male antenna separates it at once. The identical peculiar venation of the two species as well as the same general habitus shows that this difference in antennæ is not of generic value.

Family OECOPHORIDÆ.

DEPRESSARIA Haworth.

DEPRESSARIA UMBRATICOSTELLA Walsingham.

Depressaria umbraticostella Walsingham, Proc. Zool. Soc. Lond., 1881, p. 318.—Busck, Proc. U. S. Nat. Mus., XXIV, 1902, p. 736.—Dyar, List N. A. Lep., No. 5855, 1902.

Specimens from Pullman, Washington, March (Piper).

DEPRESSARIA ARGILLACEA Walsingham.

Depressaria argillacea Walsingham, Proc. Zool. Soc. Lond., 1881, p. 313.—Busck, Proc. U. S. Nat. Mus., XXIV, 1902, p. 738.—Dyar, List N. A. Lep., No. 5860, 1902.

Kaslo, British Columbia (Dyar and Cockle); Revelstoke, British Columbia (Dyar).

DEPRESSARIA KLAMATHIANA Walsingham.

Depressaria klamathiana Walsingham, Proc. Zool. Soc. Lond., 1881, p. 314.—Busck, Proc. U. S. Nat. Mus., XXIV, 1902, p. 740.—Dyar, List N. A. Lep., No. 5868, 1902.

Several specimens from Kaslo, British Columbia (Dyar and Cockle).

DEPRESSARIA ROSACILIELLA, new species.

Depressaria ciliella Walsingham, Proc. Zool. Soc., Lond., 1881, p. 316.—Busck, Proc. U. S. Nat. Mus., XXIV, 1902, p. 739.—Dyar, List N. A. Lep., No. 5863, 1902.

Not *Depressaria ciliella* Stainton, Cat. Brit. Ins. Tin., 1849, p. 17.—Staudinger and Rebel, Cat. Lep. Eur., II, No. 3234, 1901.

Labial palpi red, mottled with black, terminal joint with base and an annulus before the tip black. Antennæ reddish fuscous with narrow black annulations; face whitish; head and thorax ocherous, spotted with red. Ground color of fore wings ocherous; base unmottled, rest of wing heavily suffused with red; three discal spots in one line black with white center, a fourth obliquely above and before the first of these black with a few white scales posteriorly. Black mottling

along the costal edge, and a row of short, black lines around apical edge before the cilia; cilia reddish. Hind wings light fuscous with reddish cilia. Expanse 24 mm.

Type.—Cat. No. 7815, U. S. National Museum.

This is the species collected by Lord Walsingham in Oregon in 1872 and identified by him as the European *Depressaria ciliella* Stainton. One of his original specimens is now before me. With the additional and fresher material on hand it is very plain that it is distinct from the European species, as I had suspected before; *rosaciliella* is more narrow-winged and has a conspicuous row of black lines around the apical edge, wanting in *ciliella*; the red color is also more dull than in the European species, and the discal spots not nearly as white as in that species, the black part predominating. Besides the specimen from Camp Watsia, Oregon, April, 1872, from Lord Walsingham, I have before me specimens from Kaslo, British Columbia (Dyar and Cockle), and from Pullman, Washington (Piper).

DEPRESSARIA NUBIFERELLA Walsingham.

Depressaria nubiferella Walsingham, Proc. Zool. Soc. Lond., 1881, p. 316.—Busck, Proc. U. S. Nat. Mus., XXIV, 1900, p. 745.—Dyar, List N. A. Lep., No. 5881, 1902.

Two specimens from Pullman, Washington, July (Piper).

DEPRESSARIA CANELLA, new species.

Labial palpi white, mottled with light brown. Antennæ uniformly dark fuscous. Face white. Head light brown. Thorax pure white. Fore wings white, with black, brown, and fuscous markings; basal third nearly unmottled, with only a small dark-brown spot at base of costa and a few fuscous scales forming an inconspicuous streak perpendicular on the dorsal edge near the base. This basal white part extends farther out on the dorsal than on the costal edge. The rest of the wing is suffused with darker scales. The darkest region is found on the costal half of the middle part of the wing, next to the white basal area, and from this dark center the wing gradually becomes lighter toward the apex and dorsal edge. In the middle of the cell is a small black spot, and another still smaller is found obliquely above and before it. They are followed exteriorly by a few scattered brown scales. The outer costal edge is spotted with black and brown scales, and around the apical edge is a series of black scales before the cilia; cilia gray. Hind wings light fuscous; cilia whitish. Legs white, strongly mottled with dark fuscous. Expanse, 20 mm.

Habitat.—Pullman, Washington, September (Piper).

Type.—Cat. No. 7817, U. S. National Museum.

This species can not be confounded with any described American species of *Depressaria* and is at once recognized by the pure white

thorax and anterior part of fore wings. It is nearest the European and Siberian *Depressaria alstroemeriana* Clerck, but the dark head, mottled palpi, and shaded apical part of fore wings easily separates it from this species.

DEPRESSARIA PALLIDELLA, new species.

Antennæ dark fuscous. Labial palpi light yellow; second joint externally mottled with black; terminal joint with a narrow annulation near base and one above the middle black. Face light yellow. Head and thorax yellow slightly sprinkled with black. Fore wings light straw yellow, a shade darker at base than toward apex; beyond the unmottled basal patch is a narrow transverse area mottled with black, which is perpendicular on the dorsal edge and does not reach the costal edge. Extreme base of costa black. First discal spot small oblong black; obliquely above and before it is another small black spot; second discal spot at the end of the cell also black and small, though somewhat larger than the first. Between and above these spots is a slightly dark-shaded area. Along the costal and apical edge is a series of short black lines reaching to tornus. Cilia light yellow. Veins 2 and 3 stalked.

Hind wings light yellowish; cilia whitish; along the apical edge is a series of short black lines. Abdomen yellowish fuscous. Legs yellowish. Expanse 19 mm.

Habitat.—Kaslo, British Columbia (Dyar and Cockle).

Type.—Cat. No. 7818, U. S. National Museum.

Nearest to *Depressaria senecionella* Busck, but more narrow winged and much lighter in color.

DEPRESSARIA ALIENELLA, new species.

Depressaria emeritella Walsingham, Proc. Zool. Soc. Lond., 1881, p. 381.—Riley, Smith's List Lep. Bor. Am., No. 5261, 1891.—Busck, Proc. U. S. Nat. Mus., XXIV, 1902, p. 746.—Dyar, List N. A. Lep., No. 5884, 1902.

Not *Depressaria emeritella* Stainton, Standinger and Rebel, Cat. Lep. Eur., II, No. 3283, 1901.

This is the species determined by Lord Walsingham as the European *Depressaria emeritella*. While revising the American species of *Depressaria*,[a] I expressed in a letter to Lord Walsingham, my suspicion that some of the American species identified by him as European species were in reality distinct, and his lordship kindly sent me one of his original specimens from Rogue River, Oregon. I have now before me additional material, and there is no doubt but that the American form is distinct, though very close to *emeritella* Stainton. It belongs to the same group, with veins 2 and 3 in fore wing separate, but it is smaller, more dull brown, and at once separated from *emeritella* by the

[a] Proc. U. S. Nat. Mus., XXIV, 1902, pp. 731–749.

total absence of the angulated, whitish fascia, found in the European species. Expanse, 18 mm.

Type.—Cat. No. 7816, U. S. National Museum.

The species was taken at Kaslo, British Columbia, by Doctor Dyar.

In this connection I would say that the American species identified by Lord Walsingham as the European *Depressaria applana* Fabricius is not this species, and should be known under the original American name *clemensella* Chambers.

ETHMIA Hübner.

ETHMIA MONTICOLA Walsingham.

Psecadia monticola WALSINGHAM, Proc. Zool. Soc. Lond., 1880, p. 87.
Ethmia monticola DYAR, Journ. N. Y. Ent. Soc., X, 1902, p. 203; List N. A. Lep., No. 5905, 1902.

One perfect specimen of this species, which I have not before known except from description and figure, was collected at Pullman, Washington, by Mr. C. V. Piper.

BORKHAUSENIA Hübner.

BORKHAUSENIA PSEUDOSPRETELLA Stainton.

Oecophora pseudospretella STAINTON, Cat. Brit. Ins. Tin., 1849, p. 14.—WALSINGHAM, Ins. Life, I, 1888, p. 149.—DYAR, List N. A. Lep., No. 5926, 1902.
Borkhausenia pseudospretella BUSCK, Proc. Wash. Ent. Soc., V, 1903, p. 218.

Several specimens from Kaslo, British Columbia, August (Cockle); Victoria, British Columbia, September (Dyar); Seattle, Washington, September (Piper); Chehalis, Washington (Kincaid).

BORKHAUSENIA BORKHAUSENII Zeller.

Oecophora borkhausenii ZELLER, Isis, 1839, p. 192; Verh. k. k. zool.-bot. Gesell. Wien, XXIII, 1873, p. 290.—RILEY, Smith's List Lep. Bor. Am., No. 5551, 1891.—DYAR, List N. A. Lep., No. 5922, 1902.
Oecophora boreasella, CHAMBERS Can. Ent., V, 1873, p. 189; Cinn. Quart. Journ. Sci., II, 1875, pp. 114, 292; Bull. U. S. Geol. Surv., III, 1877, pp. 129, 141; IV, 1878, p. 159.—DYAR, List N. A. Lep., No. 5921, 1902.
Borkhausenia borkhausenii BUSCK, Proc. Wash. Ent. Soc., V, 1903, p. 218.

Two specimens from Kaslo, British Columbia, July (Dyar).

BORKHAUSENIA COLORADELLA Walsingham.

Oecophora coloradella WALSINGHAM, Ins. Life, I, 1888, p. 148.—RILEY, Smith's List Lep. Bor. Am., No. 5552, 1891.—DYAR, List N. A. Lep., No. 5923, 1902.

Three specimens from Kaslo, British Columbia, August (Cockle); also from Moscow Mountains, Idaho (Piper).

BORKHAUSENIA DIMIDIELLA Walsingham.

Oecophora dimidiella Walsingham, Ins. Life, I, 1888, p. 148.—Riley, Smith's List Lep. Bor. Am., No. 5554, 1891.—Dyar, List N. A. Lep., No. 5925, 1902.

One specimen from Kaslo, British Columbia, June (Cockle).

ENDROSIS Hübner.

ENDROSIS LACTEELLA Schiffermüller.

Endrosis lacteella Schiffermüller, Staudinger and Rebel, Cat. Lep. Eur., II, 1901, p. 163.—Dyar, List. N. A. Lep., No. 6170, 1902.

Endrosis kennicottella Clemens, Proc. Acad. Nat. Sc., Phila., 1860, p. 165; Tin. N. A., 1872, p. 119.

Endrosis fenestrella (Scopoli) Chambers, Cin. Quart. Journ. Sc., II, 1875, p. 244; Bull. U. S. Geol. Surv., IV, 1878, p. 140.

Many specimens from Kaslo, British Columbia, June (Dyar and Cockle); Corvallis, Oregon, November (Cordley); Pullman, Washington, June (Piper), and Seattle, Washington (Johnson).

Family ELACHISTIDÆ.

WALSHIA Clemens.

WALSHIA AMORPHELLA Clemens.

Walshia amorphella Clemens, Proc. Ent. Soc. Phila., II, 1864, p. 419; Tin. N. Am., 1872, p. 241.—Riley, Rep. Ins. Mo., II, 1869, p. 132; Proc. Wash. Ent. Soc., I, 1886, p. 30.—Dyar, List. N. A. Lep., No. 6179, 1902.—Busck, Proc. Wash. Ent. Soc., V, 1903, p. 203.

Laverna miscecalonella Chambers, Can. Ent., VII, 1875, p. 34.

Laverna miscecolorella Chambers, Can. Ent., VII, 1875, p. 51; Bull. U. S. Geol. Surv., III, 1877, p. 144; IV, 1878, p. 152.

Many specimens from Pullman, Washington, July and August (Piper), and from Kaslo, British Columbia, August (Dyar).

MOMPHA Hübner.

MOMPHA GRANDISELLA Chambers.

Laverna grandisella Chambers, Cinn. Quart. Journ. Sci., II, 1875, p. 296; Bull. U. S. Geol Surv., III, 1877, p. 144; IV, 1878, p. 152.—Riley, Smith List. Lep. Bor. Am., No. 5730, 1891.—Dyar, List. N. A. Lep., No. 6180.

Leucophryne tricristatella Chambers, Can. Ent., VII, 1875, p. 211; Bull. U. S. Geol. Surv., IV, 1878, p. 152.—Riley, Smith List Lep. Bor. Am., No. 5739, 1891.—Dyar, List N. A. Lep., No. 6171, 1902.

Kaslo, British Columbia, July (Dyar). Chambers' type of *Laverna grandisella* (erroneously labeled by himself, *Laverna magnatella*), is in the Museum of Comparative Zoology, Cambridge, Massachusetts, where I have also examined the type of *Leucophryne tricristatella;* the two are identical. The two names were published in the same year,

but it appears that the name *grandisella* has priority, and the species must be known under that name.

There is no justification for the genus *Leucophryne;* the species agrees in every character with the genus *Mompha.*

MOMPHA DECORELLA Stephens.

Mompha decorella STEPHENS, Dyar's Cat. N. A. Lep., No. 6155, 1902.

What is undoubtedly this species was bred in large numbers from galls on the stems of *Epilobium* at Kaslo, British Columbia, by Doctor Dyar.

Another large series of this species is in U. S. National Museum, bred in the Department of Agriculture from similar galls on *Epilobium* received from Mr. J. G. Barlow, Cadet, Missouri, and from Doctor Fletcher, Ottawa, Canada.

SCYTHRIS Hübner.

SCYTHRIS MAGNATELLA, new species.

Antennæ dark bronzy fuscous. Labial palpi dark bronzy fuscous; extreme base of second joint somewhat lighter. Head, thorax, and forewings dark bronzy fuscous; forewings sparsely suffused with white scales, scattered irregularly over the wing, and producing an irrorated appearance; these white scales are rather more frequent on the base of the fold and on the apical part of the wing; at the end of the cell is a small round black spot. Cilia light bronzy brown. The wings are very elongate, narrow and pointed, slightly caudate. Venation typical of the genus; 11 veins; 8 absent; 6 and 7 stalked; 7 to costa; 1 *b* simple at base. Hindwings nearly as broad as forewings, dark fuscous, cilia light brown; 8 veins; all separate. Abdomen dark fuscous; male genitalia very large, yellowish; uncus and claspers equally long. Legs dark bronzy fuscous, irrorated with white scales; tuft on posterior tibiæ yellowish. Alar expanse, 22 mm. Foodplant, *Epilobium.*

Habitat.—Kaslo, British Columbia (Dyar).

Type.—Cat. No. 7884, U. S. National Museum.

COSMOPTERYX Hübner.

COSMOPTERYX VILLELLA, new species.

Antennæ, dark purplish brown, with the seven last joints silvery white. Labial palpi silvery fuscous. Head and thorax, dark purplish brown, nearly black. Forewings, dark purplish brown, with silvery and bluish reflections; basal part of fold, golden; at the middle of the wing below costa is a bluish metallic spot of raised scales; slightly anteriorly on the fold is a similar spot of raised scales and within the

margin at tornus is a third such spot. Between these three spots and produced toward apex above the last of them is a large, irregular, golden-orange spot, not reaching either edge of the wing. Just before apex are a few bluish, metallic scales on the dorsal edge. Cilia, dark fuscous. Hindwings, dark, shining fuscous. Abdomen, bluish black. Legs, dark purplish brown, barred with silvery white. Expanse, 10.5 mm.

Habitat.—Seattle, Washington, June (Kincaid).

Type.—Cat. No. 7866, U. S. National Museum.

Unlike any described American form, with the usual transverse golden fascia replaced by the central longitudinal golden spot.

I hope shortly to be able to finish a revision of the American species of this genus which has long been in manuscript. In the meanwhile it will be well to call attention to the fact that the species described by Beutenmüller from Florida as *C. floridanella* and redescribed from there by the writer as *C. nigrapunctella* as mentioned before[a] is the same species which Lord Walsingham had already described as *Cosmopteryx fernaldella*, as the type of this species in Professor Fernald's collection proves. This species seems to occur all along the eastern States; I have taken it in the District of Columbia and have received it from Dr. William Dietz, collected at Hazleton, Pennsylvania.

COPTODISCA Walsingham.

COPTODISCA ARBUTIELLA, new species.

Antennæ dark fuscous. Labial palpi lead colored. Face silvery white. Head, thorax, and basal half of forewings dark leaden gray with a metallic luster. Apical half of forewings brilliant golden with a large triangular silvery costal spot at apical third, edged with black and a similar silvery spot slightly anteriorly on the dorsal edge; extreme apical patch velvety black, preceded by a small longitudinal silvery dash, and with a silvery spot edging it below. Cilia whitish with an apical black pencil, and with a perpendicular black streak in the costal part. Hindwings shining dark fuscous. Abdomen dark fuscous above, silvery white below. Legs dark fuscous. Expanse: 5–5.4 mm.

Foodplant: *Arbutus menziesi.*

Habitat.—Seattle, Washington, May (Kincaid and Meary).

Type.—Cat. No. 7867, U. S. National Museum.

The species was bred from the same leaves as *Marmara arbutiella*,[b] Busck, received in May, 1898, from Mr. E. S. Meary, Seattle, Washington.

[a] Journ. N. Y. Ent. Soc., X, 1902, p. 98.

[b] See p. 772.

The mine is the usual *Coptodisca* mine, a short serpentine and blotch mine, on the upper side of the leaf, ending in an oval clear blotch (3.5 by 2.5 mm.), the sides of which the larva cuts out and makes into a flat case, which falls to the ground or is fastened with silken threads to the twig. Between 30 and 40 mines were found in a single leaf, and the numerous perforations added considerably to the disfiguration of the leaves.

The species is hardly distinguishable from *Coptotriche splendoriferella* Clemens, though somewhat larger and differing slightly in wing pattern. The darker head and the pronounced black pencil in the white apical cilia are the best marks of recognition, but careful examination would have to be made in order to separate material not bred, as is the case with the other species of the genus. They may eventually all prove to be merely phytophagic varieties of one species, though I believe I can distinguish between the described species when fresh-bred material is at hand.

Family TINEIDÆ.

LITHOCOLLETIS Hübner.

LITHOCOLLETIS POPULIELLA Chambers.

Lithocolletis populiella CHAMBERS, Bull U. S. Geol. Surv., IV, 1878, p. 101.—DYAR, List N. A. Lep., No. 6331, 1902.

A large series of this species bred from small tentiform mines on the underside of the leaves of *Populus tremuloides* by Doctor Dyar at Kaslo, British Columbia.

GRACILARIA Haworth.

GRACILARIA ELONGELLA Linnæus.

The extreme variability of this species is well known and has been embarrassing to several lepidopterists before now. So eminent a specialist as Stainton described as new his *Gracilaria inconstans*,[a] giving figures of seven different wing patterns, all of which he ultimately realized belonged to *elongella*, and that though he well knew this species and immediately after[b] treats of its variability.

I have long had in manuscript a revision of the American species of *Gracilaria* of all of the described species of which I have authentic specimens, but I have delayed its publication mainly on account of the uncertainties about this species until such a time when more ample and bred material would come to hand. I confess that while revising this genus I had no thought of regarding as the same species any of the following decidedly different looking insects: the uniformly red-

[a] Trans. Ent. Soc. Lond., I, 1851, p. 125. [b] Idem., p. 127.

dish brown *alnicolella* Chambers; the blood red and yellow *sanguinella* Beutenmüller; the brick red *pulchella* Chambers; the fuscous *fuscomarginella* Beutenmüller; the brown, yellow, and black mottled *nigristrigella* Beutenmüller, with its variety *ruptostrigella* Beutenmüller; the pepper and salt-colored *alnivorella* Chambers, and the greenish-white black dotted *shastaella* Beutenmüller. In fact, I will candidly admit that I had made an elaborate table whereby to distinguish these supposed species.

Now, however, I have before me a large series bred by Doctor Dyar during two weeks of July from similarly rolled leaves on alder at Kaslo, British Columbia, and it includes specimens which can not be distinguished from the extremes of the foregoing series. There is the deep reddish brown unicolored form described as *alnicolella* which Chambers bred from alder in Colorado, and there is the light greenish form represented by Beutenmüller's type of *shastaella* in U. S. National Museum, as well as intervening varieties.

In view of this there can not be much doubt but that all of these names represent merely varieties of the same species.

GRACILARIA STIGMATELLA Fabricius.

One specimen bred from aspen by Doctor Dyar at Kaslo, British Columbia, July 26, which can not be distinguished from the common eastern form described by Chambers as *Gracilaria purpuriella*. There can hardly be any doubt about the identity of this species with the European *stigmatella* Fabricius.

GRACILARIA MURTFELDTELLA, new species.

Labial palpi saffron yellow on the inner side and toward base lighter. Maxillary palpi dark saffron yellow. Antennæ straw-yellow without any color annulations. Face saffron yellow with a central streak of light canary-yellow. Head light canary-yellow with collar of deep saffron yellow. Thorax canary-yellow with patagia darker. Forewings light canary-yellow with base of costa and costal part of apical half brilliant deep saffron yellow; a line of the dark yellow along the dorsal apical edge before the cilia. Apical cilia saffron yellow; dorsal cilia lighter yellow. Hindwings dark fuscous; cilia yellowish. Abdomen yellowish fuscous. Legs dark brown; tarsi whitish; hind tibia smooth. Expanse 20 mm.

Habitat.—Kirkwood, Missouri, June (Miss Murtfeldt); Pullman, Washington, August. (Piper.)

Type.—Cat. No. 7869, U. S. National Museum.

This is by far the largest and stoutest *Gracilaria* described from this country and I am unacquainted with any European species as large. In coloration it comes nearest *Gracilaria elongella* variety

sanguinella Beutenmüller,[a] but it is a much more robust insect and has none of the deep red color found in *sanguinella*.

I have long possessed the type of this striking species as a unique, kindly given me by Miss Mary Murtfeldt on a visit to her home, and I take pleasure in naming it in her honor. I was much pleased to see another perfect specimen from such a different locality as Washington in Mr. Piper's collection.

MARMARA Clemens.

MARMARA ARBUTIELLA, new species.

Antennæ dark shining brown. Labial palpi blackish brown, terminal joint with tip and an annulation around the middle silvery white. Maxillary palpi brown mottled with silver. Lower part of face silvery white. Head dark, blackish brown. Thorax dark brown. Forewings shining, dark blackish brown with silvery white markings, consisting of a straight-edged perpendicular silvery white fascia at basal third; another on the middle of the wing slightly oblique and attenuated centrally; a large triangular silvery white costal spot at apical third and a smaller one opposite on the dorsal edge; a small white costal spot just before apex. Apical cilia white, dorsal cilia dark brown. Hindwings dark brown. Abdomen fuscous, annulated with silvery white. Underside of body silvery white. Legs black with broad silvery white annulations. Venation typical. Expanse: 6–7 mm.

Foodplant: *Arbutus menziesi*.

Habitat.—Seattle, Washington, May (Kincaid and Meary).

Type.—Cat. No. 7868, U. S. National Museum.

This species was bred in May, 1898, from material received at U. S. Department of Agriculture from Mr. E. S. Meary, Seattle, Washington, who wrote that the ornamental arbutus trees were made unsightly by the work of this insect in the two-year-old leaves. This was very apparent from the appearance of the leaves submitted, which were crossed and recrossed by the yellow and white mine, so that more than half of the upper surface was discolored. The moth lays its egg on the underside of the leaf and the young larva eats its way through the leaf at once and makes a very long (10-20 inch) irregular, winding, serpentine mine just under the upper epidermis.

The mine is silvery white, and very narrow in its early course, which is presumably made in the autumn of the year; in its later (spring) course it widens out (2-5 mm.), and appears golden yellow when deserted. Several mines were found on each of the leaves received.

When full-grown the larva sheds its skin in the end of the mine and escapes through a curved slit in the epidermis. No observations were

[a] See p. 770.

made on the larva or the cocoon, but the cast skins found in the mine are identical with those of *Marmara salictella* Clemens, and there is no doubt whatever but that the larva while in the mine is flat, strongly segmented and legless, and that it, after casting its last skin in the mine, assumes a cylindrical form with well-developed legs and prolegs, and spins its cocoon in some convenient corner, presumably with the same strange globules for ornamentation as *M. salictella*.

The species is very close to *M. salictella* but larger, and distinguished by the dark head.

From the same leaves which contained the mines of this insect was bred *Coptodisca arbutiella* Busck (see p. 769).

Bred specimens were received also from Professor Kincaid.

LYONETIA Hübner.

LYONETIA SPECULELLA Clemens.

Lyonenita speculella Clemens, Proc. Ent. Soc. Phila., I, 1861, p. 134; Tin. N. Am., 1872, p. 184.—Dyar, List N. Am. Lep., No. 6418, 1902.—Busck, Proc. Wash. Ent. Soc., V, 1903, p. 209.

Lithocolletis nidificansella Packard, Guide, 1869, p. 354.—Dyar, List N. Am. Lep., No. 6417, 1902.

Lyonetia apicistrigella Chambers, Cinn. Quart. Journ. Sci., II, 1875, p. 105.—Dyar, List. N. Am. Lep., No. 6414, 1902.

Lyonetia gracilella Chambers, Can. Ent., VIII, 1876, p. 34.—Dyar, List N. Am. Lep., No. 6415, 1902.

A large well-preserved series bred at Kaslo, British Columbia, by Doctor Dyar from *Ceanothus*, *Prunus*, and *Betula*; also captured specimens from same locality (Cockle).

As already realized from the examination of the types and descriptions all the above names are synonymous. With the present excellent and abundant bred material (nearly 150 specimens) this contention is amply verified. The series comprises every variation from specimens with the pure silvery white ground color to specimens with this color thickly overlaid with dark scales. Similar variation is found in the European species of the genus.

LYONETIA SALICIELLA, new species.

Antennæ greenish fuscous. Labial palpi and face white, with a greenish tinge. Tuft on head dark, consisting of black, white, and fuscous scales. Eye caps and thorax light golden green. Forewings golden green with a few irregularly scattered black dots, and with a silvery-white longitudinal streak in the middle of the wing from base to apex. Apical part of the wing and cilia white, with a round black apical spot and black apical pencil, and with three costal and two dorsal black perpendicular dashes in the cilia. Underside of body silvery white. Legs silvery white, except the hind tibiæ, which are

golden green on the exterior side, and the tarsi, which are silvery fuscous with tip of each joint white. Alar expanse, 14 mm. Food-plant, *Salix*.

Habitat.—Kaslo, British Columbia (Dyar).

Type.—Cat. No. 7874, U. S. National Museum.

Very distinct from the other described species, and at once recognized by its larger size and the peculiar wing ornamentation.

LEUCOPTERA Hübner.

LEUCOPTERA PACHYSTIMELLA, new species.

Labial palpi obsolete. Antennæ dark shining fuscous, except the eyecaps, which are silvery white. Central part of the top of the head tufted. Face, head, and thorax silvery white. Forewings silvery white; at apical third is an outwardly oblique golden costal streak margined with black on both sides. A little farther out on the wing is another similar costal streak. Three costal and two dorsal apical black streaks in the white cilia converge toward the same point in the extreme tip of the wing; at tornus is a large conspicuous metallic spot of raised lead-colored scales, surrounded by black scales and preceded by a golden streak. Cilia and hindwing silvery white. Underside of wings dark fuscous. Abdomen and legs silvery white. Alar expanse, 8 mm. Food plant, *Pachystima myrsinites*.

Habitat.—Kaslo, British Columbia (Dyar).

Type.—Cat. No. 7875, U. S. National Museum.

PHYLLOCNISTIS Zeller.

PHYLLOCNISTIS POPULIELLA Chambers.

Phyllocnistis populiella Chambers, Cinn. Quart. Journ. Sci., II, 1875, pp. 106, 303.—Busck, Proc. U. S. Nat. Mus., XXIII, 1900, p. 252.—Dyar, List N. Am. Lep., No. 6420, 1902.

Two specimens bred from aspen at Kaslo, British Columbia (Dyar).

BRACKENRIDGIA Busck.

BRACKENRIDGIA ACERIFOLIELLA Fitch.

Ornix acerifoliella Fitch, Rep. Ins. N. Y., I, 1854, p. 269.

Incurvaria acerifoliella Clemens, Proc. Acad. Nat. Sci. Phila., 1860, p. 5; Tin. N. Am., 1872, p. 90.—Walsingham, Ins. Life, I, 1888, p. 147.—Riley, Smith's List Lep. Bor. Am., No. 5116, 1891.—Dyar, List. N. A. Lep., No. 6477, 1902.

Tinea iridella Chambers, Can. Ent., V, 1873, p. 86.

Incurvaria iridella Chambers, Bull. U. S. Geol. Surv., IV, 1878, p. 151.

Brackenridgia acerifoliella Busck, Proc. Wash. Ent. Soc., V, 1903, p. 192.

Several specimens from Kaslo, British Columbia, July (Dyar and Cockle).

INCURVARIA Haworth.

INCURVARIA ÆNESCENS Walsingham.

Incurvaria æneseens Walsingham, Ins. Life, I, 1888, p. 147.—Riley, Smith's List Lep. Bor. Am., No. 5117, 1891.—Dyar, List N. A. Lep., No. 6478, 1902.—Busck, Proc. Wash. Ent. Soc., V, 1903, p. 192.

Kaslo, British Columbia (Cockle), and Pullman, Washington, May (Piper).

INCURVARIA PIPERELLA, new species.

Antennæ blackish, with short white pubescence. Labial and maxillary palpi white. Face, head, and thorax dirty white. Fore wings dull white sprinkled with small black spots; the largest of these is at apical third just below costal edge; two smaller ones are found anteriorly to this spot just below the costal edge; one dot is on the middle of the cell and another at the end of the cell; one is above and between these latter; and the dorsal part of the wing contains several small black dots. Shortly below apex are three very small black dots in a perpendicular row. Cilia white. Hind wings dark fuscous. Abdomen dark fuscous. Legs white, sprinkled with fuscous. Under side of the wings dark fuscous. Expanse, 19–20 mm.

Habitat.—Pullman, Washington (Piper).

Type.—Cat. No. 7870, U. S. National Museum.

In coloration this species is very similar to *Greya punctiferella* Walsingham,[a] and it may easily be confounded with that species. The fore wings, however, are dull white, not shining as in Walsingham's species, and have all veins present.

MONOPIS Hübner.

MONOPIS BIFLAVIMACULELLA Clemens.

Tinea biflavimaculella Clemens, Proc. Acad. Nat. Sci. Phila., 1859, p. 257; Tin. N. Am., 1872, pp. 50, 237.—Zeller, Verh. k. k. zool.-bot. Gesell. Wien, XXIII, 1873, p. 220.—Walsingham, Trans. Am. Ent. Soc., X, 1882, p. 170.—Dyar, List. N. A. Lep., No. 6495, 1902.

Tinea insignisella Walker, Cat. Brit. Mus., XXVIII, 1863, p. 471.

Monopis biflavimaculella Busck, Proc. Wash. Ent. Soc., V, 1903, p. 184.

This seems to be the representative species of this group from this region. It was received in large series from all collectors. Kaslo, British Columbia (Dyar and Cockle); Seattle, Washington (Kincaid, Piper, and Johnson).

This species, as well as *aurosuffusella* Chambers, and *dorsistrigella* Clemens,[b] which are all placed in the genus *Tinea* in Dyar's List, should be transferred to *Monopis*. Species of this genus are easily recognized by the naked depression in the disk of the fore wings.

[a] Dyar's List N. A. Lep., No. 6483, 1902.

[b] Idem, Nos. 6493 and 6502, 1902.

TINEOLA Herrich-Schaeffer.

TINEOLA BISELLIELLA Hummel.

Tinea biselliella HUMMEL, Ess. Ent., III, 1829, p. 13.—PACKARD, Am. Nat., I, 1867, p. 423.—ZELLER, Verh. k. k. zool.-bot. Gesell. Wien, XXIII, 1873, p. 223.—RILEY, Smith's List Lep. Bor. Am., No. 5081, 1891.

Tineola biselliella FERNALD, Can. Ent., XIV, 1882, p. 169.—DYAR, List N. A. Lep., No. 6487, 1902.

Several examples from Kaslo, British Columbia (Cockle and Dyar), and from Pullman, Washington (Piper).

These latter are labeled "in specimen of *Acridium americana*." Presumably a cabinet specimen. I have repeatedly been somewhat troubled by this habit of the insect, which must be classed among those dangerous to entomological collections.

TINEA AUROPULVELLA Chambers.

Tinea auropulvella CHAMBERS, Can. Ent., V, 1873, p. 90; VII, 1875, p. 125; VIII, 1876, p. 19; Bull. U. S. Geol. Surv., IV, 1878, p. 163.—RILEY, Smith's List Lep. Bor. Am., No. 5075 (part), 1891.—DYAR, List N. A. Lep., No. 6491 (part), 1902.

Kaslo, British Columbia, July (Dyar).

This species, which has been placed as a synonym of *Tinea acapnopennella* Clemens since the time of Riley's List, is decidedly distinct from that species, as the types in the U. S. National Museum prove.

These types I obtained some years ago from Laval University, Quebec, through the kindness of Rev. C. E. Dionne.

TINEA OREGONELLA Busck.

Tinea oregonella BUSCK, Journ. N. Y. Ent. Soc., VIII, 1900, p. 246.—DYAR, List N. A. Lep., No. 6518, 1902.

A few examples from Pullman, Washington (Piper).

TINEA LEUCOCAPITELLA, new species.

Antennæ dark purplish brown. Labial palpi with second joint dark brown and terminal joint yellow. Maxillary palpi blackish. Face and head light yellow. Thorax and fore wings dark purplish brown with a small yellow spot on the fold and one at the end of the cell, the former preceded by black scales, the latter with a round blackish spot edging it below. Anterior legs black; the other legs yellowish, sprinkled with fuscous. Venation and oral characters typical. Expanse, 28 mm.

Habitat.—Pullman, Washington, July (Piper).

Type.—Cat. No. 7871, U. S. National Museum.

This striking species has the identical color of wings and head as *Tinea croceoverticella* Chambers,[a] which, however, has not the same

[a] Dyar's list N. A. Lep., No. 6500, 1902.

wing marking. The size at once distinguishes the present species, as it has more than twice the alar expanse.

From the description of *Tinea niveocapitella* Chambers it is evident that it must be a nearly related species. I am unacquainted with it except from the description, and can not determine the present form as Chambers's species, because the description of the wing markings does not fully agree with my specimen and especially as Chambers's species has only an expanse of 7 lines = 15–16 mm.

TINEA FUSCIPUNCTELLA Haworth.

Tinea fuscipunctella Haworth, Lep. Brit., 1829, p. 562.—Walsingham, Trans. Am. Ent. Soc., 1882, p. 171.—Riley, Smith's List Lep. Bor. Am., No. 5089, 1891.—Dyar, List N. A. Lep., No. 6503, 1902.—Busck, Proc. Wash. Ent. Soc., V, 1903, p. 185.

Tinea nubilipennella Clemens, Proc. Acad. Nat. Sci. Phila., 1859, p. 257; Tin. N. Am., 1872, p. 58.

Oecophora frigidella Packard, Proc. Bost. Soc. Nat. Hist., XI, 1867, p. 61.

Tinea spretella (Stainton) Zeller Verh. k. k. zool.-bot. Gesell. Wien, 1873, p. 222.

Many specimens from Kaslo, British Columbia (Dyar and Cocke), and from Pullman, Washington (Piper).

I have examined Packard's types of *Oecophora frigidella*, now in the Museum of Comparative Zoology in Cambridge. There is no doubt about their identity with this species, as determined by Lord Walsingham with some hesitation.

TINEA PELLIONELLA Linnæus.

Tinea pellionella Linnæus, Syst. Nat., 1758, p. 536.—Walsingham, Trans. Am. Ent. Soc., X, 1882, p. 170.—Riley, Smith's List Lep. Bor. Am., No. 5105, 1891.—Fernald, Can. Ent., XIV, 1882, p. 169.—Dyar, List. N. A. Lep., No. 6520, 1902.

Tinea grisella Chambers, Can. Ent., V, 1873, p. 88.

Several examples. Kaslo, British Columbia (Dyar).

ADELA Latreille.

ADELA SEPTENTRIONELLA Walsingham.

Adela septentrionella Walsingham, Proc. Zool. Soc. Lond., 1880, p. 79.—Dyar, List. N. A. Lep., No. 6559, 1902.

Seattle, Washington, June (Kincaid).

SCARDIA Treitschke.

SCARDIA BURKERELLA, new species.

Antennæ black, each joint narrowly tipped with yellow. Labial palpi yellowish white; exterior side of the second joint and tuft and a spot at base of the terminal joint black. Maxillary palpi small, simple.

yellow. Head and thorax dirty yellowish white; patagia blackish. Fore wings showing yellowish white, with golden and bluish reflections, and marked with blackish brown. At the base of costa is a large oblique irregular blackish spot extending along the base of the fold, but not reaching the dorsal edge. On the middle of the costal edge is a large quadrangular dark brown spot; another smaller quadrangular blackish spot is found at the beginning of the costal cilia, but only touching the costal edge by a corner; between and below these two spots is a more or less diffused blackish spot connecting the lower corners of these. On the middle of the dorsal edge is a similar angulated but somewhat diffused spot, and along the entire edge of the wing are smaller blackish brown dots. Outside of these markings the wing is sparsely mottled with blackish scales. Cilia golden white. Hind wings light fuscous. Abdomen yellowish fuscous. Legs yellowish white, mottled and barred with dark brown. Expanse, 28 mm.

Habitat.—Hoquiam, Washington (Burke).

Type.—Cat. No. 7872, U. S. National Museum.